

Appendix A to Part 440--Information Requirements for Obtaining a Maximum Probable

Loss Determination for Licensed Launch Activities

Any person requesting a maximum probable loss determination shall submit the following information to the Office, unless the Office has waived a particular information requirement under 14 CFR 440.7(c):

I. General Information

A. Mission description.

1. A description of mission parameters, including:
 - a. Launch trajectory;
 - b. Orbital inclination; and
 - c. Orbit altitudes (apogee and perigee).
2. Flight sequence.
3. Staging events and the time for each event.
4. Impact locations.
5. Identification of the launch range facility, including the launch complex on the range, planned date of launch, and launch windows.
6. If the applicant has previously been issued a license to conduct launch activities using the same launch vehicle from the same launch range facility, a description of any differences planned in the conduct of proposed activities.

B. Launch Vehicle Description.

1. General description of the launch vehicle and its stages, including dimensions.
2. Description of major systems, including safety systems.
3. Description of rocket motors and type of fuel used.

4. Identification of all propellants to be used and their hazard classification under the Hazardous Materials Table, 49 CFR 172.101.

5. Description of hazardous components.

C. Payload.

1. General description of the payload, including type (e.g., telecommunications, remote sensing), propellants, and hazardous components or materials, such as toxic or radioactive substances.

D. Flight Termination System.

1. Identification of any flight termination system (FTS) on the launch vehicle, including a description of operations and component location on the vehicle.

II. Pre-Flight Processing Operations

A. General description of pre-flight operations including vehicle processing consisting of an operational flow diagram showing the overall sequence and location of operations, commencing with arrival of vehicle components at the launch range facility through final safety checks and countdown sequence, and designation of hazardous operations, as defined in 14 CFR 440.3. For purposes of these information requirements, payload processing, as opposed to integration, is not a hazardous operation.

B. For each hazardous operation, including but not limited to fueling, solid rocket motor build-up, ordnance installation, ordnance checkout, movement of hazardous materials, and payload integration:

1. Identification of location where each operation will be performed, including each building or facility identified by name or number.
2. Identification of facilities adjacent to the location where each operation will be performed and therefore exposed to risk, identified by name or number.
3. Maximum number of Government personnel and individuals not involved in licensed launch

activities who may be exposed to risk during each operation. For Government personnel, identification of his or her employer.

4. Identification of launch range facility policies or requirements applicable to the conduct of operations.

III. Flight Operations

A. Identification of launch range facilities exposed to risk during launch vehicle lift-off and flight.

B. Identification of accident failure scenarios, probability assessments for each, and estimation of risks to Government personnel, individuals not involved in licensed launch activities, and Government property, due to property damage or bodily injury. The estimation of risks for each scenario shall take into account the number of such individuals at risk as a result of lift-off and flight of a launch vehicle (on-range, off-range, and down-range) and specific, unique facilities exposed to risk. Scenarios shall cover the range of launch trajectories, inclinations and orbits for which authorization is sought in the license application.

C. On-orbit risk analysis assessing risks posed by a launch vehicle to operational satellites.

D. Reentry risk analysis assessing risks to Government personnel and individuals not involved in licensed launch activities as a result of reentering debris or reentry of the launch vehicle or its components.

E. Trajectory data as follows: Nominal and 3-sigma lateral trajectory data in x, y, z and x (dot), y (dot), z (dot) coordinates in one-second intervals, data to be pad-centered with x being along the initial launch azimuth and continuing through impact for suborbital flights, and continuing through orbital insertion or the end of powered flight for orbital flights.

F. Tumble-turn data for guided vehicles only, as follows: For vehicles with gimbaled nozzles, tumble turn data with zeta angles and velocity magnitudes stated. A separate table is required for each combination of fail times (every two to four seconds), and significant nozzle angles (two or

more small angles, generally between one and five degrees).

G. Identification of debris lethal areas and the projected number and ballistic coefficient of fragments expected to result from flight termination, initiated either by command or self-destruct mechanism, for lift-off, land overflight, and reentry.

IV. Post-Flight Processing Operations

A. General description of post-flight ground operations including overall sequence and location of operations for removal of vehicle components and processing equipment from the launch range facility and for handling of hazardous materials, and designation of hazardous operations.

B. Identification of all facilities used in conducting post-flight processing operations.

C. For each hazardous operation:

1. Identification of location where each operation is performed, including each building or facility identified by name or number.
2. Identification of facilities adjacent to location where each operation is performed and exposed to risk, identified by name or number.
3. Maximum number of Government personnel and individuals not involved in licensed launch activities who may be exposed to risk during each operation. For Government personnel, identification of his or her employer.
4. Identification of launch range facility policies or requirements applicable to the conduct of operations.

Appendix B to Part 440--Agreement for Waiver of Claims and Assumption of Responsibility

THIS AGREEMENT is entered into this _____ day of _____, by and among [Licensee] (the ``Licensee"), [Customer] (the ``Customer") and the Federal Aviation Administration of the Department of Transportation, on behalf of the United States Government (collectively, the ``Parties"), to implement the provisions of section 440.17(c) of the Commercial Space Transportation Licensing Regulations, 14 CFR Ch. III (the ``Regulations").

In consideration of the mutual releases and promises contained herein, the Parties hereby agree as follows:

1. Definitions

Customer means the above-named Customer on behalf of the Customer, any person to whom the Customer has sold, leased, assigned, or otherwise transferred its rights in the payload (or any part thereof) to be launched by the licensee, including a conditional sale, lease, assignment, or transfer of rights, any person who has placed property on board the payload for launch or payload services, and any person to whom the Customer has transferred its rights to the launch services.

License means License No. _____ issued on _____, by the Associate Administrator for Commercial Space Transportation, Federal Aviation Administration, Department of Transportation, to the Licensee, including all license orders issued in connection with the License.

Licensee means the Licensee and any transferee of the Licensee under 49 U.S.C. Subtitle IX, ch. 701.

United States means the United States and its agencies involved in Licensed Launch Activities.

Except as otherwise defined herein, terms used in this Agreement and defined in 49 U.S.C. Subtitle IX, ch. 701--Commercial Space Launch Activities, or in the Regulations, shall have the same meaning as contained in 49 U.S.C. Subtitle IX, ch. 701, or the Regulations, respectively.

2. Waiver and Release of Claims

(a) Licensee hereby waives and releases claims it may have against Customer and the United States, and against their respective Contractors and Subcontractors, for Property Damage it sustains and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault.

(b) Customer hereby waives and releases claims it may have against Licensee and the United States, and against their respective Contractors and Subcontractors, for Property Damage it sustains and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault.

(c) The United States hereby waives and releases claims it may have against Licensee and Customer, and against their respective Contractors and Subcontractors, for Property Damage it sustains, and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault, to the extent that claims it would otherwise have for such damage or injury exceed the amount of insurance or demonstration of financial responsibility required under sections 440.9(c) and (e), respectively, of the Regulations, 14 CFR 440.9(c) and (e).

3. Assumption of Responsibility

(a) Licensee and Customer shall each be responsible for Property Damage it sustains and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault. Licensee and Customer shall each hold harmless and indemnify each other, the United States, and the Contractors and Subcontractors of each Party, for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault.

(b) The United States shall be responsible for Property Damage it sustains, and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities,

regardless of fault, to the extent that claims it would otherwise have for such damage or injury exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(c) and (e), respectively, of the Regulations, 14 CFR 440.9(c) and (e).

4. Extension of Assumption of Responsibility and Waiver

(a) Licensee shall extend the requirements of the waiver and release of claims, and the assumption of responsibility, hold harmless, and indemnification, as set forth in paragraphs 2(a) and 3(a), respectively, to its Contractors and Subcontractors by requiring them to waive and release all claims they may have against Customer and the United States, and against the respective Contractors and Subcontractors of each, and to agree to be responsible, for Property Damage they sustain and to be responsible, hold harmless and indemnify Customer and the United States, and the respective Contractors and Subcontractors of each, for Bodily Injury or Property Damage sustained by their own employees, resulting from Licensed Launch Activities, regardless of fault.

(b) Customer shall extend the requirements of the waiver and release of claims, and the assumption of responsibility, hold harmless, and indemnification, as set forth in paragraphs 2(b) and 3(a), respectively, to its Contractors and Subcontractors by requiring them to waive and release all claims they may have against Licensee and the United States, and against the respective Contractors and Subcontractors of each, and to agree to be responsible, for Property Damage they sustain and to be responsible, hold harmless and indemnify Licensee and the United States, and the respective Contractors and Subcontractors of each, for Bodily Injury or Property Damage sustained by their own employees, resulting from Licensed Launch Activities, regardless of fault.

(c) The United States shall extend the requirements of the waiver and release of claims, and the assumption of responsibility as set forth in paragraphs 2(c) and 3(b), respectively, to its Contractors and Subcontractors by requiring them to waive and release all claims they may have against Licensee and Customer, and against the respective Contractors and Subcontractors of each, and to

agree to be responsible, for any Property Damage they sustain and for any Bodily Injury or Property Damage sustained by their own employees, resulting from Licensed Launch Activities, regardless of fault, to the extent that claims they would otherwise have for such damage or injury exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(c) and (e), respectively, of the Regulations, 14 CFR 440.9(c) and (e).

5. Indemnification

(a) Licensee shall hold harmless and indemnify Customer and its directors, officers, servants, agents, subsidiaries, employees and assignees, or any of them, and the United States and its agencies, servants, agents, subsidiaries, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims that Licensee's Contractors and Subcontractors may have for Property Damage sustained by them and for Bodily Injury or Property Damage sustained by their employees, resulting from Licensed Launch Activities.

(b) Customer shall hold harmless and indemnify Licensee and its directors, officers, servants, agents, subsidiaries, employees and assignees, or any of them, and the United States and its agencies, servants, agents, subsidiaries, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims that Customer's Contractors and Subcontractors, or any person on whose behalf Customer enters into this Agreement, may have for Property Damage sustained by them and for Bodily Injury or Property Damage sustained by their employees, resulting from Licensed Launch Activities.

(c) To the extent provided in advance in an appropriations law or to the extent there is enacted additional legislative authority providing for the payment of claims, the United States shall hold harmless and indemnify Licensee and Customer and their respective directors, officers, servants, agents, subsidiaries, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims that Contractors and Subcontractors of the United States may have for

Property Damage sustained by them, and for Bodily Injury or Property Damage sustained by their employees, resulting from Licensed Launch Activities, to the extent that claims they would otherwise have for such damage or injury exceed the amount of insurance or demonstration of financial responsibility required under sections 440.9(c) and (e), respectively, of the Regulations, 14 CFR 440.9(c) and (e).

6. Assurances Under 49 U.S.C. 70112(e)

Notwithstanding any provision of this Agreement to the contrary, Licensee shall hold harmless and indemnify the United States and its agencies, servants, agents, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims for Bodily Injury or Property Damage, resulting from Licensed Launch Activities, regardless of fault, except to the extent that:

(i) as provided in section 7(b) of this Agreement, claims result from willful misconduct of the United States or its agents; (ii) claims for Property Damage sustained by the United States or its Contractors and Subcontractors exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(e) of the Regulations (14 CFR 440.9(e)); (iii) claims by a Third Party for Bodily Injury or Property Damage exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(c) of the Regulations (14 CFR 440.9(c)), and do not exceed \$1,500,000,000 (as adjusted for inflation after January 1, 1989) above such amount, and are payable pursuant to the provisions of 49 U.S.C. 70113 and section 440.19 of the Regulations (14 CFR 440.19); or (iv) Licensee has no liability for claims exceeding \$1,500,000,000 (as adjusted for inflation after January 1, 1989) above the amount of insurance or demonstration of financial responsibility required under section 440.9(c) of the Regulations (14 CFR 440.9(c)).

7. Miscellaneous

(a) Nothing contained herein shall be construed as a waiver or release by Licensee, Customer or the United States of any claim by an employee of the Licensee, Customer or the United States, respectively, including a member of the Armed Forces of the United States, for Bodily Injury or Property Damage, resulting from Licensed Launch Activities.

(b) Notwithstanding any provision of this Agreement to the contrary, any waiver, release, assumption of responsibility or agreement to hold harmless and indemnify herein shall not apply to claims for Bodily Injury or Property Damage resulting from willful misconduct of any of the Parties, the Contractors and Subcontractors of any of the Parties, and in the case of Licensee and Customer and the Contractors and Subcontractors of each of them, the directors, officers, agents and employees of any of the foregoing, and in the case of the United States, its agents.

(c) In the event that more than one customer is involved in Licensed Launch Activities, references herein to Customer shall apply to, and be deemed to include, each such customer severally and not jointly.

(d) This Agreement shall be governed by and construed in accordance with United States Federal law.

IN WITNESS WHEREOF, the Parties to this Agreement have caused the Agreement to be duly executed by their respective duly authorized representatives as of the date written above.

LICENSEE

By: _____

Its: _____

CUSTOMER

By: _____

Its: _____

DEPARTMENT OF TRANSPORTATION

